

REMARKS

The indication that claims 5-6, 8-9, and 11 include patentable subject matter and that claim 12 has been allowed is acknowledged with thanks. In reliance thereon, claim 5 has been placed in independent form by adding the subject matter of claim 1. Allowance of amended claim 5 is respectfully requested.

Claims 1, 4, and 7 were rejected as unpatentable over NAKAYA 5,483,609. Reconsideration and withdrawal of the rejection are respectfully requested.

Claim 1 is directed to an embodiment of the present invention that includes a first conductive thin film layer containing an oxide and a second conductive thin film layer laminated on the first layer and that exhibits acidic or neutral characteristics when oxidized.

The Official Action indicates that NAKAYA discloses an optical device (Figure 2) that includes a first layer 25 (which is part of buffer layer 13) containing an oxide ( $\text{SiO}_2$ ) and a second layer 26 (Si) laminated on the first layer. The Official Action acknowledges that NAKAYA fails to mention that the layers are conductive, and asserts that conductive films are well known and would have been obvious to use in NAKAYA instead of the layers disclosed.

However, the first layer 25 in NAKAYA is  $\text{SiO}_2$ , which is a well-known insulator. The waveguide of Figure 2 of NAKAYA

includes two electrodes 14<sub>1</sub> and 14<sub>2</sub> that are on buffer layer 13 and that receive different modulating voltages (column 3, line 36). If the first layer 25 (buffer layer 13) were replaced with a conductive layer, the two electrodes would be short-circuited and the waveguide would not function. Accordingly, one of skill in the art would not replace the first layer with a conductive layer, and the rejection of claim 1 under §103 should be withdrawn.

Further, the knowledge that a different material exists is not sufficient motivation to use the material. There must be some concrete evidence of record that provides motivation, suggestion, teaching, or reason for making the substitution. The Official Action does not indicate why one of skill in the art would replace a well-known dielectric with a conductive layer. Accordingly, the Official Action has not made a *prima facie* case that the invention would be obvious to one of skill in the art at the time of the invention.

Claim 10 was rejected as unpatentable over NAKAYA in view of MURAI Pub. No. 2002/0123158 and NISHIWAKI et al. 5, 193,130. The Official Action asserts that MURAI is in the same field of endeavor as the NISHIWAKI et al. and that one of skill in the art would use chromium as the second thin film layer. However, MURAI relates to an electromechanical transducer that operates as a piezoelectric device (0020). The chromium film is

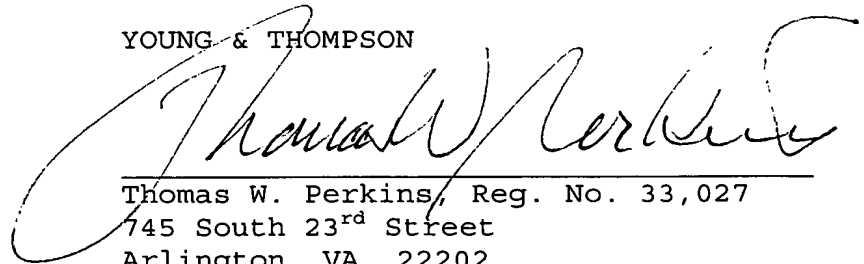
used to hold an electrode to a diaphragm that vibrates (0082, 0084, 0085). There is no relationship at all between an optical waveguide device and an electromechanical transducer. The environments in which they function are completely different and thus different mechanical and physical properties are imposed on each. One of skill in the art of optical waveguide devices would not turn to MURAI for a suggestion to replace a silicon layer (26 in NAKAYA) with a chromium layer. Accordingly, the rejection of claim 10 under §103 should be withdrawn.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17.

Respectfully submitted,

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